

REMARKS

Claims 1 through 24 are currently pending in the application.

Claims 1 through 10, 12 through 22 stand rejected..

Applicant notes with appreciation the allowance of claims 11, 23 and 24.

35 U.S.C. § 103

Obviousness Rejection Based on U.S. Patent 6,217,183 to Shipman

Claims 1 through 4, 6 through 8, 10 and 14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shipman (U.S. Patent 6,217,183).

Applicant respectfully traverses this rejection as hereinafter set forth.

M.P.E.P. § 706.2(j) sets forth the standard for a § 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

Shipman teaches or suggests a keyboard having illuminated keys. (Abstract). The key caps of the keyboard are partially translucent and are illuminated by a light source which

underlies the key caps. (Col. 2, lines 37-39). This light source may be an LED or LCD. (FIG. 4). A translucent light channeling membrane directs light to the key caps. (Col. 6, lines 28-31).

Applicant respectfully submits that Shipman fails to teach or suggest claim limitations of independent claims 1 and 8 to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed invention of a remote computer keyboard incorporating "luminescent material embedded within each key cap". At best, Shipman teaches or suggests key caps that are partially translucent and positioned over a separate light source. (Col. 6, lines 28-32). Therefore, Shipman cannot and does not teach or suggest a keyboard that includes key caps with embedded luminescent material as required by the claimed invention.

Applicants also submit that Shipman fails to teach or suggest the claim limitation calling for "providing illumination directly to multiple key caps using optical fiber strands" as required in claim 6. Again, at best, Shipman teaches or suggests that the optical fiber strands are routed alongside, below, or embedded in the light channeling membrane so that the light rays are received by the translucent material and routed within the membrane's translucent region to the key caps. (Col. 7, lines 19-25). Thus, Shipman teaches or suggests an indirect routing to achieve illumination of the key caps and does not teach providing illumination directly to the key caps.

Turning to claim 7, the claimed invention requires a claim limitation directed to a remote computer keyboard including "a projector plane positioned beneath a plurality of key caps, said projector plane having an edge for receiving light" and "apertures which direct light from within the projector plane to each key cap of said plurality of key caps." Shipman does not teach or suggest a light channeling membrane having an edge for receiving light. Instead, the light source of Shipman extends below each key cap. (Col. 6, lines 44-49). In Shipman, the light channeling membrane has an opaque coating allowing light to be emitted only through the bores corresponding to the graphic symbol on the key cap. (Col. 6, lines 35-43). Therefore, Shipman does not teach or suggest the claim limitation calling for "a projector plane positioned beneath a plurality of key caps, said projector plane having an edge for receiving light" nor does teach or

suggest the claim limitation calling for "apertures which direct light from within the projector plane to each key cap of said plurality of key caps".

Regarding claim 10, the claimed invention sets forth the claim limitation calling for "each key cap having at least one identifying graphic symbol formed from luminescent material on an upper surface thereof." Shipman does not teach or suggest key caps having luminescent symbols. Rather, Shipman teaches or suggests key caps with symbols that are opaque or translucent, illuminated by light from a light source positioned beneath the key caps, and routed through the shaft of the key member to provide illumination. (Col. 6, lines 35-43). The key caps of Shipman do not provide light themselves, they merely receive light generated elsewhere.

Applicant further submits that the reference teaches away from the Applicant's invention and cannot establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed invention because Shipman is directed toward key caps which route light through the key caps. Therefore, Shipman cannot teach or suggest a method of having key caps which act as light sources because Shipman only routes light through the key caps.

Claims 2 through 4 are each allowable as depending either directly or indirectly from allowable claim 1.

Claim 14 depends from claim 12. Claim 12 has not been identified in the Office Action of January 13, 2003, as being rendered obvious by Shipman. Rather, the Office Action states that Shipman does not describe "a chemical source of electrical power," a limitation of claim 12. Applicant respectfully suggests that Shipman does not teach or suggest "a chemical source of electrical power". Therefore, it is respectfully submitted that regarding claim 14, Shipman cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103.

Applicants respectfully submit that having failed to teach or suggest each and every limitation of the claims, the cited prior art cannot and does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed invention.

Rejection Based on U.S. Patent 6,217,183 to Shipman in view of U.S. Patent 5,925,110 to Klein

Claims 12, 15 and 18 through 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shipman in view of Klein (U.S. Patent 5,925,110).

The discussion of Shipman above is incorporated herein by reference. Klein teaches or suggests a low power keyboard including a power supply and also a method of determining the state of a keyboard key. (Title, Abstract).

The claimed invention set forth in claim 12 is directed to a remote computer keyboard comprising at least one optical fiber strand directing light from a sight source *directly* to each key cap. In contrast, the optical fiber strands of Shipman are routed alongside, below or embedded in the light channeling membrane so the light rays are received by the translucent material and channeled within the membrane's translucent region to the key members. (Col. 7 lines 19-25). The optical fiber strands of Shipman do not provide illumination directly to the key caps. The light transmitted through the fiber optic cable is transmitted laterally when received by the keyboard light channeling membrane. (Col. 4, lines 41-45). In contrast, in Applicant's invention the fiber optic cable is directly routed to each key cap and light is not transmitted horizontally.

Applicant therefore respectfully submits that neither Shipman nor Klein nor any combination of Shipman and Klein teaches or suggests each and every element of claim 12 to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention. Accordingly it is respectfully submitted that claim 12, is allowable over the combination of Shipman and Klein under 35 U.S.C. § 103.

As presently amended, claim 15 as presently amended contains a limitation calling for "a projector pane positioned beneath at least two key caps of said key caps mounted atop said plurality of depressible key switch devices, said projector pane having an edge for receiving light" and "said apertures direct light from within the pane to each key cap". The light channeling membrane of Shipman has no edge for receiving light. Rather, the light source of Shipman extends below each of the key caps. The light channeling membrane has an opaque coating, and

allows the light to be emitted only through the bores corresponding to each key cap. (Col. 6, lines 44-49).

Therefore, neither Shipman nor Klein nor any combination of Shipman and Klein teaches or suggests each and every claim limitation of claim 15 as amended herein to establish a *prima facie* case of obviousness under 345 U.S.C. § 103 regarding the presently claimed invention. Accordingly it is respectfully submitted that claim 15 is allowable over the combination of Shipman and Klein.

Turning to claim 19 of the present invention, the claimed invention sets forth a limitation calling for "luminescent material embedded within a portion of each key cap". Shipman does not teach or suggest a keyboard having key caps that have luminescent material embedded in the surface of the key cap. Instead, Shipman teaches partially translucent key caps that route light generated elsewhere, and do not act as a light source.

Therefore, Shipman does not teach or suggest each and every limitation of claim 19 to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed invention. It is respectfully submitted that claim 19 is allowable over the combination of Shipman and Klein.

Claims 18, 20, and 21 are each allowable as depending, either directly or indirectly from allowable claims 15 and 19.

#### **Allowable Subject Matter**

Applicant notes with appreciation the allowance of claims 11, 23, and 24.

#### **Objection to Claims 5, 9 and 22**

Claims 5, 9, 13, 16, 17 and 22 are objected to as being dependent upon rejected base claims, but are indicated to contain allowable subject matter and would be allowable if placed in appropriate independent form. Claims 5, 9, 13, 17, 18 and 22 have been amended. Claim 16 has

been cancelled. It is respectfully requested that claims 5, 9, 13, 17, 18 and 22 be reconsidered in light of the amendments and remarks presented herein.

**Entry of Amendment**

Applicant requests entry of this amendment for the following reasons:

The amendment is timely filed.

The amendment clearly places the application in condition for allowance.

The amendment does not require any further search of consideration.

Conclusion

Claims 1 through 10 and 12 through 22 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Applicants request the allowance of such claims and the case passed for issue. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, the Examiner is respectfully invited to contact Applicant's undersigned attorney.

Respectfully submitted,



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JRD/sls:djp

• Enclosure: Version with Markings to Show Changes Made

N:\2269\3976\Amendment Under 37 CFR 1.116.wpd

**APPENDIX A**

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS:**

A marked-up version of each of the presently amended claims, highlighting the changes thereto, follows:

5. (Twice Amended) [The remote computer keyboard of claim 1, wherein said] A remote computer keyboard comprising:  
an enclosure member;  
a printed circuit board positioned in said enclosure member;  
a plurality of depressible key switch devices arrayed above said printed circuit board;  
a key cap mounted atop each switch device of said plurality; each key cap having at least one identifying graphic symbol formed on an upper surface thereof; and  
luminescent material includ[es]ing tritium embedded within [each] said at least one symbol of said key cap.

9. (Three Times Amended) [The remote computer keyboard of claim 1, wherein the] A remote computer keyboard comprising:  
an enclosure member;  
a printed circuit board positioned in said enclosure member;  
a plurality of depressible key switch devices arrayed above said printed circuit board;  
a key cap mounted atop each switch device of said plurality, each key cap having at least one identifying graphic symbol, formed on an upper surface thereof; and  
luminescent material embedded within each key cap; and



said at least one symbol on each key cap is identifiable under bright lighting conditions and identifiable for a period of time in non-bright lighting conditions when said luminescent material luminesces.

13. (Twice Amended) [The remote computer keyboard of claim 12, wherein each] A remote computer keyboard comprising:  
an enclosure member;  
a printed circuit board positioned in said enclosure member;  
a plurality of depressible key switch devices arrayed above said printed circuit board;  
a key cap mounted atop each switch device of said plurality of switch devices, each key cap having a central portion formed from light transmissible material and having at least one identifying graphic symbol formed on said central portion;  
a chemical source of electrical power;  
at least one light source powered by said chemical source of electrical power; and  
at least one optical fiber strand directing light from said at least one light source, said at least one optical fiber strand associated with each key cap extend[s]ing through an aperture within said circuit board beneath each key cap said at least one optical fiber strand directing light to each key cap.

15. (Twice Amended) A remote computer keyboard comprising:  
an enclosure member;  
a printed circuit board positioned in said enclosure member;  
a plurality of depressible key switch devices arrayed above said printed circuit board;  
a key cap mounted atop each switch device of said plurality of switch devices, each key cap  
having a central portion formed from light transmissible material and having at least one  
identifying graphic symbol formed on said central portion;  
a chemical source of electrical power;

at least one light source powered by said chemical source of electrical power; and  
a projector pane positioned beneath at least two key caps of said key caps mounted atop said plurality of depressible key switch devices, said projector pane having an edge for receiving light from said at least one light source and having apertures [which] a portion of said apertures being covered with a reflective coating, said apertures direct light from within the pane to each key cap mounted atop said plurality of depressible key switch devices.

17. (Amended) The remote computer keyboard of claim [16] 15, wherein said projector pane is positioned beneath said printed circuit board.

18. (Amended) The remote computer keyboard of claim [16] 15, wherein each aperture is positioned directly beneath a key cap.

22. (Three Times Amended) [The remote computer keyboard of claim 19, wherein] A remote computer keyboard comprising:  
an enclosure member;  
a chemical source of electrical power;  
a transmitter mounted on said enclosure member, said transmitter powered by said chemical source of electrical power;  
an insulative material layer covered with circuit traces, said insulative material layer being positioned in said enclosure member, said circuit traces being coupled to said transmitter;  
a plurality of depressible key switch devices arrayed above said insulative material layer;  
a key cap mounted atop each switch device of said plurality of switch devices, each key cap having at least one identifying graphic symbol formed on a surface thereof; and  
luminescent material include[s]ing tritium embedded within said at least one symbol of each key cap.